

### REMARKS

Upon entry of this Amendment, Claims 1-6, 8-15, 19, 29-32, 35, 36 and 58-76 stand withdrawn by the Office Action, and Claims 7, 16-18, 20-28, 33, 34, 37, 44, and 57 will be cancelled, and Claims 38-43, and 45-56 will remain pending in this case.

Applicants wish to thank the Examiner for the suggestions included in the Office Action directed to rendering the claims in condition for allowance, and Applicants have taken most if not all of the Examiner's suggestions in that regard.

Again, Applicants point out that pending Claims 38-57 are drawn to SEQ ID NOs 1 and 2, that withdrawn Claims 58-76 are drawn to SEQ ID NOs 3 and 4, and that withdrawn Claims 1-6, 8-15, 19, 29-32, 35, 36 and 38 are drawn to SEQ ID NOS 5 and 6, and respectfully request that upon examining Claims 38-57, if allowable subject matter is found, that the Examiner reconsider permitting the withdrawn claims to remain in the case pursuant to MPEP 821.01.

The Office Action indicates that the application does not contain an Abstract of the Invention. Applicants are concerned in that an Abstract of the Invention was filed with the case, but has apparently been separated from the application. Applicants request that the Examiner confirm that all pages of the original application are in the Examiner's files, which should consist of pages 1-28 of the specification, pages 29-33 of original Claims 1-27 and an additional single Abstract page. Also included in the initial filing were two figures of drawings for Fig. 1 and Fig. 2 and the Sequence Listing in computer readable and paper form, and a certified copy of the priority document and a preliminary amendment. However, to be responsive to the Office Action, Applicants are "amending" by way of this Office Action to add an Abstract page, but note that the Examiner should already have such an Abstract page in his files.

The Abstract specification was objected to as not including a "Brief Description of the Drawings" section. Such a section has been added by this Amendment.

Applicants appreciate the Examiner acknowledging the claim for priority in the Office Action and for acknowledging receipt of the IDS submitted April 4, 2002 in the case.

Fig. 1 has been objected to on the basis that certain lines were light and certain reference characters were not plain and legible. Applicants believe this was a problem associated with the photocopying process. Applicants have printed out and include herewith an "amended" Fig. 1. Amended Fig. 1 does not change any substantive aspects of the drawings (e.g. it does not add any new matter), but has been carefully produced on a laser printer, and the "light" reference lines and numerals have been darkened. It is believed that amended Fig. 1 overcomes the objections raised by the draftsman. If amended Fig. 1 is not deemed to overcome the objection by the draftsman, Applicants respectfully request that the draftsman provide a little more detail as to what portions of Fig. 1 are giving rise to any future objection so that Applicants can focus on that section or portion of Fig. 1.

Paragraphs 6 through 8 of the Office Action raise certain objections to the claims, and Applicants have amended the claims in accordance with the Examiner's suggestions in paragraphs 6 through 8. These grounds of objection are believed to have been overcome.

Paragraphs 9 through 10 raise certain Section 101 rejections of the claims. Applicants have adopted the Examiner's suggestion, and it is believed this ground for rejection has been overcome.

Paragraphs 11 through 24 of the Office Action raise Section 112, second paragraph rejections of the claims. Applicants have adopted the Examiner's suggestions, and it is believed this ground for rejection has been overcome.

Paragraphs 25 through 27 raise Section 112, first paragraph rejections of the claims. Applicants have adopted the Examiner's suggestions, and it is believed this ground for rejection has been overcome.

Paragraph 28 of the Office Action rejects Claims 44 and 55 under 35 U.S.C. Section 102(b) as being anticipated by Fitzmaurice et al (U.S. Patent NO. 5705624). As Claim 44 has been cancelled, and parts (iii) through (v) have been cancelled from

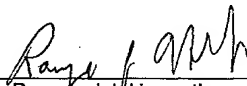
Claim 55, the sequence disclosed by Fitzmaurice et al does not destroy the novelty of the pending claims as amended. The amended claims are believed to be novel over the reference cited.

Applicants acknowledge with appreciation the indication of allowability of Claims 45-46, 48-50, 52-54 set forth in Paragraph 29 of the Office Action.

In view of the foregoing remarks and amendments, the pending claims are believed to be in condition for allowance. Review, reconsideration and allowance of the claims is respectfully requested.

Respectfully submitted,

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METHOD OF FINDING MODULATORS OF ENZYMES OF THE CAROTENOID  
BIOSYNTHETIC PATHWAY

ABSTRACT OF THE DISCLOSURE

This invention relates to nucleic acids which encode tobacco zeta-carotene synthase, to polypeptides encoded thereby, and to methods of finding modulators of the activity of zeta carotene synthase, phytoene synthase and phytoene desaturase.